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Light vehicles: Regulations Nos. 68 (Measurement of the maximum speed, including electric vehicles), 83 (Emissions of M_1 and N_1 vehicles), 101 (CO_2 emissions/fuel consumption) and 103 (Replacement pollution control devices)

Proposal for a new Supplement to the 06 and 07 series of amendments to UN Regulation No. 83 (Emissions of M1 and N1 vehicles)

Submitted by the expert from the International Organization of Motor Vehicle Manufacturers*

The text reproduced below was prepared by the expert from the International Organization of Motor Vehicle Manufacturers (OICA) to adapt the provisions in UN Regulation No. 83 to allow the usage of WLTP-based Ki and Deterioration Factor (DF) factors as well as On-Board Diagnostics (OBD) demos. The modifications to the current text of the Regulation are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2018–2019 (ECE/TRANS/274, para. 123 and ECE/TRANS/2018/21 and Add.1, Cluster 3), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

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I. Proposal

Add a new paragraph 14.

"14. Alternative procedures

14.1. Alternative procedure for periodical regenerating systems

As an alternative to the procedure set out in Annex 13 of this Regulation, the manufacturer may use the results determined by the WLTP procedure, described in Appendix 1 to Annex 6 of Amendment 4 of the UN GTR No. 15.

In this case, the following additional provisions apply:

(a) At the request of the manufacturer and with the agreement of the responsible authority the Extra High phase may be excluded for determining the regenerative factor Ki for Class 2 and Class 3 vehicles.

(b) Instead of the criterion described in paragraph 7.1.4.2. of this Regulation the criterion shall be based on the WLTP test mass: The test mass of each vehicle in the family must be less than or equal to the test mass of the vehicle used for the Ki demonstration test plus 250 kg.

(c) Additive and multiplicative Ki are valid and are to be applied accordingly.

14.2. Alternative procedure for the Type V test

As an alternative to the road load, inertia weight class and Type I test cycle of this Regulation those from the WLTP, described in Amendment 4 of the UN GTR No. 15, may be used for the durability test.

In this case, the following additional provisions apply:

(a) The references to the Type I test in paragraph 2.3.1.7. of Annex 9 of this Regulation shall be understood as reference to the Type 1 test in Amendment 4 of the UN GTR No. 15.

(b) The references to the Type I test in paragraph 2.3.2.6. of Annex 9 of this Regulation shall be understood as reference to the Type 1 test in Amendment 4 of the UN GTR No. 15.

(c) The references to the Type I test in paragraph 3.1. of Annex 9 of this Regulation shall be understood as reference to the Type 1 test in Amendment 4 of the UN GTR No. 15.

(d) The reference in paragraph 6.3.1.2. of Annex 9 of this Regulation to the methods in Appendix 7 to Annex 4a shall be understood as being a reference to Annex 4 of Amendment 4 of the UN GTR No. 15.

(e) The reference in paragraph 6.3.1.4. of Annex 9 of this Regulation to Annex 4a shall be understood as being a reference to Annex 4 of Amendment 4 of the UN GTR No. 15.

(f) The road load coefficients to be used shall be those for vehicle low (VL). If VL low does not exist or the total load of vehicle (VH) at 80 km/h is higher than the total load of VL at 80 km/h + 5 %, then the VH road load shall be used. VL and VH are defined in point 4.2.1.1.2. of Annex 4 of Amendment 4 of the UN GTR No. 15.

(g) For Class 2 and Class 3 vehicles, all four phases of the WLTC shall be used.

(h) Additive and multiplicative DF factors are valid and are to be applied accordingly.

14.3. Alternative procedure for the Type VI test

As an alternative to the road load coefficients and inertia weight class according to Appendix 7 of Annex 4a of this Regulation the road load coefficients and test mass of WLTP, described in Annex 4 of Amendment 4 of the UN GTR No. 15, may be used.

In this case, the following additional provision apply:

The road load coefficients to be used shall be those for vehicle low (VL). If VL does not exist then the VH road load shall be used. VL and VH are defined in point 4.2.1.1.2. of Sub-Annex 4 to Annex XXI. The dynamometer shall be adjusted to simulate the operation of a vehicle on the road at -7 °C. Such adjustment may be based on a determination of the road load force profile at -7 °C. Alternatively, the driving resistance determined may be adjusted for a 10% decrease of the coast-down time. The technical service may approve the use of other methods for determining the driving resistance.

14.4. Alternative procedure for the OBD test

As an alternative to the Type I test cycle of this Regulation, Type I test cycle described in Annex 6 of Amendment 4 of the UN GTR No. 15 may be used.

In this case, the following additional provision apply:

The reference to the Type I test cycle in section 2.1.3 of Appendix 1 to Annex 11 of this Regulation shall be understood as a reference to the Type I test of Amendment 4 of the UN GTR No. 15 for each individual malfunction to be demonstrated.

For Class 2 and Class 3 vehicles, all four phases of the WLTC shall be used.

The use of additional preconditioning cycles or alternative preconditioning methods shall be documented in the type approval documentation.

14.4.1. The Type I test cycle referred to in paragraph 3.3.3.2. of Annex 11 shall be understood as being the same as the Type 1 test cycle that was used for at least two consecutive cycles after introduction of the misfire faults according to paragraph 6.3.1.2. of Appendix 1 to Annex 11.

14.4.2. Paragraph 6.2.2. of Appendix 1 to Annex 11 shall be understood to read as follows:

'At the request of the manufacturer, alternative and/or additional preconditioning methods may be used.'"

II. Justification

1. The influence of different test cycles on the factors is limited, additionally the WLTP provides the more recent and robust testing.

2. In the case a manufacturer approves a vehicle according to WLTP, it saves significant testing burden, if that results can also be used for UN Regulations No. 83 and No. 101 approvals.